

WHAT IS CLAIMED IS:

1. An image signal processing apparatus to be used for an image display apparatus provided with a display panel having scan-wiring lines, modulation lines, and display elements that are driven via said scan-wiring lines and modulation lines; a scanning circuit for supplying scanning signals to said scan-wiring lines according to such a scanning method as to select a plurality of adjoining scan-wiring lines simultaneously in each selection period while changing the set of scan-wiring lines to be selected simultaneously so that the same scan-wiring line is selected two or more times in each frame; and a modulation circuit for supplying modulation signals to said modulation lines, wherein:

said image signal processing apparatus comprises filter means for performing, on received image data, signal processing for compensating for a reduction in resolution in a vertical scanning direction that is caused by said scanning method of said scanning circuit, and for supplying resulting image data to said modulation circuit; and

a normalized vertical spatial frequency response characteristic of said filter means satisfies $0 \text{ dB} < G_1 \leq +6 \text{ dB}$, where G_1 is a gain at a spatial frequency corresponding to $1/2$ of a vertical critical resolution of said display panel.

2. The image signal processing apparatus according to claim 1, wherein said normalized vertical spatial frequency response characteristic of said filter means satisfies $G2 \geq +3$ dB, where $G2$ is a gain at a spatial frequency corresponding to 7/10 of said vertical critical resolution of said display panel.

3. An image display apparatus comprising:

a display panel having scan-wiring lines, modulation lines, and display elements that are driven via said scan-wiring lines and modulation lines;

a scanning circuit for supplying scanning signals to said scan-wiring lines according to such a scanning method as to select a plurality of adjoining scan-wiring lines simultaneously in each selection period while changing the set of scan-wiring lines to be selected simultaneously so that the same scan-wiring line is selected two or more times in each frame;

a modulation circuit for supplying modulation signals to said modulation lines; and

filter means for performing, on received image data, signal processing for compensating for a reduction in resolution in a vertical scanning direction that is caused by said scanning method of said scanning circuit, and for supplying resulting

image data to said modulation circuit,

wherein a normalized vertical spatial frequency response characteristic of said image display apparatus satisfies $-3 \text{ dB} < R_1 \leq +3 \text{ dB}$, where R_1 is a response at a spatial frequency corresponding to $1/2$ of a vertical critical resolution of said display panel.

4. The image display apparatus according to claim 3, wherein said display panel comprises electron-emitting elements as display elements located at crossing points of said scan-wiring lines and said modulation lines, and a phosphor that emits light when electrons emitted from said electron-emitting elements collide with it.

5. The image display apparatus according to claim 4, wherein said electron-emitting elements are surface conduction electron-emitting elements.

6. The image display apparatus according to claim 4, wherein said electron-emitting elements are FE electron-emitting elements.

7. An image signal processing method for processing image signals to be supplied to an image display apparatus having a modulation circuit for supplying modulation signals to modulation lines of a display panel and a scanning circuit for supplying scanning signals to scan-wiring lines of said display panel in such a manner as to select a plurality of

adjoining scan-wiring lines simultaneously in each selection period while changing the set of scan-wiring lines to be selected simultaneously so that the same scan-wiring line is selected two or more times in each frame, said image signal processing method comprising:

a filtering step of performing, on received image data, signal processing for compensating for a reduction in resolution in a vertical scanning direction that is caused by said scanning circuit, and supplying resulting image data to said modulation circuit,

wherein a normalized vertical spatial frequency response characteristic of said filtering step satisfies $0 \text{ dB} < G1 \leq +6 \text{ dB}$, where $G1$ is a gain at a spatial frequency corresponding to $1/2$ of a vertical critical resolution of said display panel.

8. The image signal processing method according to claim 7, wherein said normalized vertical spatial frequency response characteristic of said filtering step satisfies $G2 \geq +3 \text{ dB}$, where $G2$ is a gain at a spatial frequency corresponding to $7/10$ of said vertical critical resolution of said display panel.

9. An image display method using an image display apparatus having a scanning circuit for supplying scanning signals to scan-wiring lines of a display panel and a modulation circuit for supplying

modulation signals to modulation lines of said display panel, said image display method comprising:

a scanning step of causing said scanning circuit to select a plurality of adjoining scan-wiring lines simultaneously in each selection period while changing the set of scan-wiring lines to be selected simultaneously so that the same scan-wiring line is selected two or more times in each frame; and

a filtering step of performing, on received image data, signal processing for compensating for a reduction in resolution in a vertical scanning direction that is caused by said scanning step, and supplying resulting image data to said modulation circuit,

wherein a normalized vertical spatial frequency response characteristic of said image display apparatus satisfies $-3 \text{ dB} < R_1 \leq +3 \text{ dB}$, where R_1 is a response at a spatial frequency corresponding to $1/2$ of a vertical critical resolution of said display panel.